Review

Sharman HLP-270 Halo Antenna Review

A halo antenna is a ½ wavelength dipole antenna that has been bent into a circle with an electrical break directly opposite the feedpoint.

The new Sharman HLP-270 dual-band halo loop antenna from Moonraker covers 2m and 70cm in a small, lightweight package. It covers 140-150MHz and 400-470MHz, with an advertised gain of 4dBi on 2m and 5dBi on 70cm. The SWR across these frequencies is claimed to be less than 1.5 on both bands.

A halo antenna is essentially a half-wave dipole, bent so the dipole ends almost meet. It's almost omnidirectional and is horizontally polarised. A folded dipole/halo gives more gain than a straight dipole when mounted horizontally. With a standard dipole it makes no difference if they are vertical or horizontal, the gain is the same, albeit more directional when horizontally polarised.

Because the dipole is bent to form a square, the halo antenna has a very low visual impact, which could be a real plus if you're limited in what you can mount. This halo measures in at 11 x 11 inch (28 x 28cm) and is arranged in a square. It's also small enough for mobile use and portable/SOTA use. The weight is only 360g.

The halo comes supplied with a small instruction leaflet and the fixings needed to mount it on a mast/pole. First impressions were positive, it's well constructed. You do have some quick setup to do with the supplied Allen key, you need to set the gamma match spacing to ensure it's resonant at the desired frequencies. This is easy to do using the instructional leaflet – this took all of ten minutes.

It comes with a SO239 connector that, while ubiquitous, wouldn't be my first choice for a 2m/70cm antenna. It's also rated up to 800 watts, which isn't surprising given the solid construction, but I'd very much hope this would be a theoretical maximum power limit for such an antenna.

So, faced with having a lightweight 2m/70cm antenna to review, sunny weather and one of my favourite VHF contests on at the weekend, I decided to put the antenna through its paces. I climbed a nearby hill for the second RSGB 2m Backpackers Contest to see what I could work using just 3 watts with such an antenna. I mounted it on a short 4m fibreglass fishing pole, which proved its suitability for portable use and just how lightweight it is! I tested the SWR first of all with my NanoVNA analyser. This showed the halo to have a reasonably flat SWR of 1.5 across both the 2m and 70cm bands, but I didn't adjust the gamma match, so it may be possible to get it lower.

To try and make the most of my very limited 3 watts of SSB to the halo antenna, I matched it with a short length of LMR-400 Ultraflex coax cable connected to my Elecraft KX3 (with the 2m transverter board fitted). This would ensure I wasn't losing too much of my 3 watts before it reached the halo.

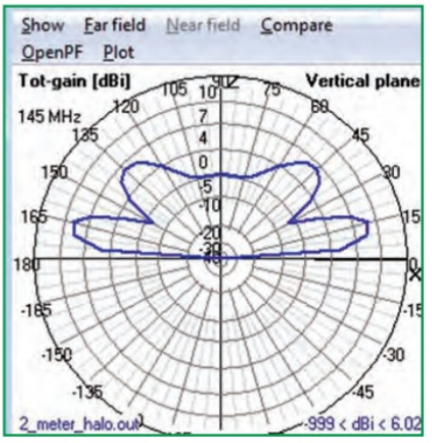
The Sharman HLP-270 Halo on the mast while testing it during the second RSGB 2m Backpackers Contest.

This clearly wasn't going to be a serious contest entry, but I worked 22 stations in 1.5 hours. With my best DX being GW1IDF/P in IO81 at 161km. I'll take that with 3 watts and not a Yagi in sight! The one that got away was GD0AMD/P on the Isle of Man, we started to exchange details, but he faded down into the noise before we could complete. This would have been a very respectable 369km with very low power to the halo. During use I noticed the halo was slightly directional, you could peak stations up an extra S-point, which is what you might expect given its omnidirectional nature.

Conclusion

The halo has surprised me, it's a cheap, lightweight, neat and compact antenna to get you onto 2m and 70cm. Is it going to perform better than a Yagi? Probably not, but if you need something that's very compact and not going to draw too much attention then this is it. I had fun testing it and it proved to be a decent little antenna. It's currently available from Moonraker for £49.95 [1]. Thanks to Moonraker (moonrakeronline.com) for the loan.

The Sharman Halo antenna close up. It comes with a proper mast clamp, but here I improvised with cable ties to fix it to my narrow fibreglass mast.



This displays the modelled radiation plot of the Sharman HLP-270 Halo on 145MHz.

Websearch

[1] https://moonrakeronline.com/sharman-hlp-270-dual-band-halo-loop-antenna

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